CLAIMS

1. A method for determining a chemotherapeutic regimen for an individual having a primary and metastatic tumor, comprising

a) obtaining a mRNA sample from the indvidual's primary tumor specimen;

b) determining a gene expression level for a tumor gene determinant in the primary tumor specimen;

c) comparing the gene expression level for the tumor gene determinant with a predetermined threshold value for that tumor gene; and

d) providing a chemotherapeutic regimen comprising a chemotherapeutic agent appropriate for the tumor gene determinant to treat the individual having a tumor metastases.

2. The method of claim 1 wherein the tumor gene determinant is *EGFR*.

3. The method of claim 1 wherein the tumor gene determinant is *DPD*.

4. The method of claim 1 wherein the tumor gene determinant is *TS*.

5. The method of claim 1 wherein determining gene expression level comprises a fluorescence based real-time detection method.

6. The method of claim 5 wherein the tumor gene determinant is *EGFR*.

7. The method of claim 5 wherein the tumor gene determinant is *DPD*.

8. The method of claim 5 wherein the tumor gene determinant is *TS*.

9. A method of determining whether a chemotherapeutic regimen comprising a chemotherapeutic agent appropriate for a tumor gene determinant in a primary tumor is appropriate for a tumor metastasis comprising,

a) obtaining an mRNA sample from the primary tumor,

b) determining an expression level of the tumor gene determinant,

c) comparing the expression level of the tumor gene determinant with a predetermined threshold level; and

d) determining the chemotherapeutic regimen for the tumor metastsis.

10. The method of claim 9 wherein the tumor gene determinant is *EGFR*.

11. The method of claim 9 wherein the tumor gene determinant is *DPD*.

12. The method of claim 9 wherein the tumor gene determinant is *TS*.

13. A method of determining whether an anti-metabolite, genotoxic, and/or receptor tyrosine kinase targeted gene expression based chemotherapeutic appropriate for treating a primary tumor is appropriate for treating a tumor metastasis comprising quantifying an amount of tumor gene determinant mRNA expression in fresh, frozen, fixed or fixed and paraffin-embedded (FPE) tissue relative to gene expression of an internal control in a primary tumor.

14. The method of claim 13 wherein the tumor gene determinant is *DPD*.

15. The method of claim 13 wherein the tumor gene determinant is *TS*.

16. The method of claim 13 wherein the tumor gene determinant is *EGFR*.